Example 2:

Use the remainder theorem to calculate the remainder in the following case:

$$\frac{x^3+2x^2-4x+1}{x-3}$$ ← DIVIDEND / ← DIVISOR

Step 1: Equate the divisor to 0 and solve for x:

$\therefore\ x-3=0$

$x=3$

Step 2: Substitute x-value obtained above into the dividend

$\therefore f(x)=x^3+2x^2-4x+1$

$f(3)=(3)^3+2(3)^2-4(3)+1$

$f(3)=27+2(9)-12+1$

$f(3)=34$

$\therefore$ Remainder $=34$

Remainder Theorem Exercises

Use the Remainder Theorem to calculate the remainder in each of the following cases:

1) $\dfrac{2x^3-4x^2+6x-12}{x+3}$

2) $\dfrac{4x^3-12x^2+4}{2x+3}$

3) $\dfrac{6x^3-2x^2+4x-4}{3x+6}$